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ABSTRACT

To facilitate learning, teachers often employ varied teaching strategies and activities to accommodate different learning style preferences in students. This study explored elementary school students' preferences for learning environments, providing a pilot validation of the 40-question "If I Were in Charge of the Class" learning preference questionnaire for elementary students. Subjects were 481 third through fifth graders; the questionnaire, previously subjected to an analysis of content validity, was administered to measure four dimensions: teacher-directed instruction, student-directed inquiry, independent study, and group work. Exploratory factor analysis revealed that the questionnaire assessed three factors associated with learning preferences: teacher-directed activity, student-initiated activity, and group activity. These empirically-derived factors were very similar to three of the original factors proposed on the basis of the content validation. The one exception related to independent study items, which were included in teacher-directed and student-initiated activities. (The proposed distinction made between choice and context was not observed in this study's data.) Subject to further testing and refinement, this questionnaire may be used by teachers to assess the nature of activities that their students prefer, providing guidance in overall categories but flexibility in the use of specific learning activities. (Contains 11 statistical tables and 7 references.) (EV)

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ED 403 036

Investigating Learning Preferences With Elementary School Students[1]

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Purpose

The purposes of this study were to explore elementary school students' preferences for learning environments and to design an instrument to assess these preferences. The study represents a pilot validation of the instrument *If I Were in Charge of the Class*, a learning preference questionnaire designed for 3rd through 5th grade students. The instrument consists of 40 questions and measures students' attitudes toward learning activities seen in classroom situations.

Theoretical Framework

There are few who would dispute the claim that the aim of teaching is to promote learning in students. Teachers, therefore, strive to provide an environment rich in resources that will facilitate learning. One method used by teachers to accommodate learning is to provide activities and use strategies that accommodate various style preferences in students. For the purposes of this paper, learning styles will be discussed in terms of those strategies employed by teachers and students that facilitate learning.

Learning, according to cognitive psychologists, can be described using an information-processing model. Gagné, Yekovich, and Yekovich (1993) describe such a model as one that takes into account knowledge acquisition, storage, and retrieval. This project is primarily interested in the representative aspects of knowledge and the acquisition mechanisms at work in an attempt to isolate the preferred modalities that children demonstrate in learning environments. Knowledge can be broken down into declarative or "knowledge about" and procedural or "knowledge how to do". Both types of knowledge are represented in memory differently and it is the job of the teacher to vary teaching strategies to facilitate acquisition of each. Just as the strategies employed by teachers make up her/his teaching style, a student's learning style is defined in terms of the activities that she/he prefers. The instrument, *If I Were in Charge of the Class*, looks at these activities from a domain general perspective because of the interdisciplinary nature of the elementary classroom.

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Rowe (1991) emphasizes a holistic view of learning by including the social structure into the assumptions about perception and knowledge. She says that "knowledge and knowing result from processes of social interchange and interaction with the environment" (p. 5). Further, no one way of learning or knowledge acquisition can be looked at in isolation. We must, therefore, look at how each child brings with her/him an individuality that predisposes her/him for learning. How we learn, according to Rogoff (1984) and Vygotsky (1978) is dependent on social context. History will determine the tools with which we have at our disposal, and society will dictate how our environment is organized, all of which influence learning. Schools, therefore, play an integral role in learning but not as the purveyors of information. Rather, the appropriate role is as a social institution that provides an environment suitable for each child to learn. The skills thought most valuable and technology available to aid learning will change depending on the historical context and will influence the underlying cognitive strategies one uses to learn.

According to Renzulli (1994) there are two types of teaching and learning: deductive and inductive. The information is fed to students by the teacher and curriculum in discrete, sometimes unconnected, pieces. While there are basic skills that need to be learned in school that require the input of a teacher, one criticism of this method is that there may be times when some of what is learned is lost, since it never becomes connected to a larger idea or real world situation. On the other hand, inductive teaching which is at the heart of enrichment learning and teaching allows students to personalize their learning environment. This is seen when teachers allow the student to self-select activities that match her/his interests or learning style. The selection of activities, based on the student's strengths, interests, and learning style, is a major component to enrichment learning.

Understanding the learning preferences of students can help teachers provide the proper stimulation that can afford each child the opportunity to acquire skills and knowledge that are appropriate to her/him. The four learning preference dimensions originally hypothesized for this instrument fell into two general categories: Selection (Teacher Directed Instruction and Student Directed Inquiry) and Context (Independent Study and Group Oriented Work). As the names indicate, Teacher Directed Instruction includes activities that are selected by the teacher and in Student Directed Inquiry activities are selected by the student. The context dimension is concerned with how the student prefers to work and subsequently learn, either individually (Independent Study) or in a group. The selection of the activity, either teacher or student, is of no concern for these questions.

Methodology

Support for the content validity of the instrument was developed from the literature and judgments of content experts. Three faculty in educational psychology, 4 graduate student in gifted

education, and 2 area elementary teachers reviewed the proposed dimensions and draft items. This examination of content validity resulted in an instrument with 40 questions employing a 5-point Likert scale (Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Always = 5). It was proposed that the instrument measure four dimensions: Teacher Directed Instruction, Student Directed Inquiry, Independent Study, and Group Work.

A random sample was drawn from 3rd through 5th grade classrooms in Connecticut, Michigan, New York, and Tennessee. All students were asked to complete the *If I Were in Charge of the Class* learning styles questionnaire. A total of 481 students were surveyed, with listwise deletion of cases with missing data reducing the sample to 462.

The initial phases of the examination of construct validity were carried out using an exploratory factor analysis with SPSS for the PC and the principal axis factoring technique. An exploratory analysis rather than a confirmatory analysis was employed, since this was the initial empirical screening of the item inter-relationships (Gable and Wolf, 1993). Following further refinement of the instrument, we intend to apply confirmatory analyses to data from new samples of students.

Item analysis and alpha internal consistency data were also generated.

Results

Validity

Item means and standard deviations for the data set can be found in Table 1[2]. None of the items used on the instrument appear unusual with means between 1.83 and 3.31 and standard deviations ranging from 1.04 to 1.44.

The factor solution provided three factors with eigen values over 1.0 accounting for 33% of the common variance (see Table 2). Varimax and oblimin (oblique) rotations were run extracting these three factors in the PAF program. Table 3 displays the varimax factor matrix and Table 4 the oblimin factor matrix. Table 5 provides the factor inter-correlation matrix, which suggests that the factors are not correlated with the exception of a small correlation, r=.32, between Factors 1 and 2. Examination of the entries in Tables 3 & 4 indicate that there are three items that differ between the two rotations, 15, 31, and 32. Items 15 and 31 double load on Factor 2 and Factor 3 in the oblique rotation. The negative loadings on Factor 3 indicate that conceptually these items belong in Factor 2. Next, question 32 loads on Factor 2 in the oblique rotation but conceptually belongs with Factor 3. The varimax rotation shows these three items falling in the factors that make conceptual sense and warrants use of this rotation for the analysis.

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[2] All tables have been placed at the end of the text. The inter-item correlation matrix is available from the first author, please send requests via e-mail to MAR94003@UCONNVM.UCONN.EDU.

Table 6a displays Factor 1 called **Teacher Directed Activity**. It contains items with loadings that range from .36 to .67. These items all involve questions relating to very traditional, teacher directed types of activities. All of the items with the word "teacher" can be found in this factor. The other, non-teacher directed items include:

27. Searching for answers to homework questions by myself.
16. Hearing other student's ideas during discussions.
40. Hearing other students present reports in class.
26. Learning new things by organizing study groups.
11. Reading a book to learn about a new topic.
3. Going to the library to look up information on my own.

Conceptually, it could be argued that these items describe what may be considered passive modes of learning in that they require the student to be receptors of knowledge predetermined by someone else, (i.e., the teacher or other students). In terms of the concepts of choice and context previously discussed in the definition of dimension section, the choice of activity is determined external to the student. For example, searching for answers to homework assigned by the teacher, listening to other students' reports or opinions, and reading books and the author's point of view. Further discussion of item to factor cohesiveness will be reviewed within the reliability analysis and inclusion of these items in the final instrument will be seriously considered. The reader should note that items such as 27, 26, 11, and 3 were postulated on a theoretical basis to be included in Factor 2. This may account for the low inter-correlation (.32) reported previously.

Students who score highly on this factor have indicated that they prefer activities that are teacher directed. Such activities include those that are directed by the teacher, such as lecture, discussion, and drill and recitation. A high score in this category indicates that the student prefers the teacher assign the topics, give direction, and supply worksheets. The evaluative nature of activities like giving tests, or quizzes is included in this factor as well, but the direction of the items allows the student to show what she/he knows.

The teacher may not always be the object of attention for students who score highly in this category. Listening to other students present lessons or projects is also included. The information is coming from outside the individual rather than being self-directed. There are several items in this category that, on first glance, may seem more appropriate in the Student Directed Inquiry category. Closer examination shows that they may represent for students activities normally associated with teachers. They include going to the library to look up information, reading a book, and organizing study groups.

Factor 2, **Student Initiated Activity**, appears to describe action oriented, individually executed types of activities, and contains items that load between .33 and .66 (see Table 6b). Words like "I" and "my" dominate the items in this factor. These items are marked by interest and work

done outside the classroom and the choice is clearly in the hands of the student. There is no distinction made between the hypothesized choice and context, with items from the student directed inquiry and independent study clustering together. Many of the items represent nontraditional types of activities like finding experts and interviewing people to find out information, working on the computer, acting out stories, and students choosing topics to investigate.

Factor 3, called Group Activity, contains the smallest number of items, which load between .42 and .69 (see Table 6c). Students who score highly on this factor are those who have an affinity for group-related activities. There is no ambiguity in the conceptual framework of this factor, since all items contain activities that involve other students, working in a group, or being part of a committee.

Reliability

Alpha reliability was examined using the SPSS reliability procedure. Results can be found in Tables 7a-c. Factor 1, as seen in Table 7a, has a respectable dimension-level alpha reliability coefficient of .87 and the correlation of each respective item with the remaining items defining the dimension range from .41 and .58. Overall, the means and standard deviations are moderate. Removing any of the items will not significantly change the obtained .87 reliability.

Closer examination of items 3, 11, 16, 26, 27, and 40, which were discussed previously in reference to conceptual agreement with the factor, shows that these items are not problematic to the reliability of the dimension-level score. We do note, though, that these items represent some of the lowest correlations of the respective item with the remaining items defining the dimension.

The alpha reliability data for Factor 2 can be found in Table 7b. We note that three items defining Factor 2 correlate .35 or less with the remaining items in the dimension. As separate analysis was run which deleted these items 2, 35, and 36 from the factor. The overall reliablility was lowered to .81, which is not significantly different from the original .82. These items could be reviewed to determine if they conceptually add to the definition of the dimension.

The results of the alpha reliability data for Factor 3 is contained in Table 7c. The overall alpha is .78 and includes seven items that correlate well with the dimension. Perusal of the means and standard deviations show no problem items. Removal of any item reduces the alpha reliability only slightly. This alpha is considered more than adequate for an affective instrument (Gable & Wolf, 1993). To bring the alpha to a level of .80 would entail the addition of 7 new items which would promote the need for an additional exploratory analysis with a new sample. This option will be considered in the future.

Conclusion

In this study a 40 item instrument was developed and the resulting analysis determined it to assess three factors associated with learning preferences in upper elementary students. The derived factors, Teacher Directed Activity, Student Initiated Activity, and Group Activity resemble three of the four proposed dimensions, Teacher Directed Instruction, Student Directed Inquiry, and Group Oriented Work. The empirically derived factors were very similar to the factors proposed on the basis of the literature and the judgments of the content experts. The one exception area related to the Independent Study items that were included in Teacher Directed Activity and Student Initiated Activity. The proposed distinction made between choice and context was not observed in the data collected for this study. The resulting instrument does contain items that reflect activities that occur in classrooms everyday and allows for flexibility in curriculum delivery. This instrument can give teachers an assessment of the nature of activities that their students prefer, but does not limit the types of activities that can be used. Within each area assessed by this instrument, there are many activities that can be used, thus insuring that students are exposed to a variety of learning experiences within their own style preference.

As stated previously, this study constitutes a preliminary examination of this instrument. Further data are needed to investigate a few questionable items in Factors 1 and 2 which will add to the practical application of the instrument. Further research is recommended to see the extent elementary students differentiate preferences by subject area and the impact this would have on later versions of this instrument.

References

Gable, R. K., & Wolf, M. B. (1993). *Instrument development in the affective domain: Measuring attitudes and values in corporate and school settings.* Boston: Kluwer Academic Publishers.

Gagné, E. D., Yekovich, C. W., & Yekovich, F. R. (1993). *The cognitive psychology of school learning.* New York: HarperCollins College Publishers.

Renzulli, J. S. (1994). *Schools for talent development: A practical plan for total school improvement.* Mansfield Center, CT: Creative Learning Press.

Rogoff, B. (1984). Introduction: Thinking and learning in social context. In B. Rogoff & J. Lave (Eds.), *Everyday cognition: Its development in social context.*. Cambridge, MA: Harvard University Press.

Rowe, H. A. H. (1991). Introduction: Paradigm and context. In H. A. H. Rowe (Ed.), *Intelligence: Reconceptualization and measurement.* (pp. 1-18). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Sternberg, R. J. (1986). *Intelligence applied: Understanding and increasing your intellectual skills.* San Diego, CA: Harcourt Brace Jovanovich, Publishers.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Table 1
Univariate Statistics (N=481)

Item	Mean	Std Dev	Label
1	2.61	1.06	Having the teacher call on student to give answers.
2	2.16	1.26	Finding experts to answer questions about a topic I am interested in.
3	2.54	1.26	Going to the library to look up information on my own.
4	2.71	1.15	Working with other students on a report to give in class.
5	2.36	1.12	Having discussions in my class where the teacher asks us questions.
6	2.31	1.34	Working on projects that are not assigned in class.
7	2.16	1.23	Working by myself to learn the lesson.
8	2.51	1.11	Being part of a committee with other students.
9	1.95	1.24	Having the teacher assign the topic for an assignment.
10	3.08	1.10	Choosing my own topic to study.
11	2.59	1.15	Reading a book to learn about a new topic.
12	2.35	1.37	Studying with other students for a test.
13	2.88	1.10	Hearing the teacher explain new information.
14	3.22	1.05	Doing science experiments or arts projects where I get to do the work.
15	2.36	1.19	Working alone on projects for class.
16	2.71	1.10	Hearing other student's ideas during discussions.
17	1.83	1.29	Having the teacher quiz me on what I read or learned.
18	2.16	1.35	Doing reports on books I chose to read outside of class.
19	3.31	1.04	Working on the computer by myself.
20	2.84	1.12	Working in a group with other students who like the same topic.
21	2.22	1.31	Doing worksheets from the teacher.
22	3.26	1.13	Going to museums/science centers to learn about something I am interested in.
23	2.78	1.20	Learning new things by experimenting with different materials on my own.
24	2.66	1.12	Working with other students on assignments or projects.
25	2.20	1.24	Taking tests the teacher makes to show what I know.
26	2.10	1.16	Learning new things by organizing study groups.
27	2.32	1.24	Searching for answers to homework questions by myself.
28	2.97	1.22	Playing computer games with other students.
29	2.18	1.15	Having the teacher suggests topics for discussion in class.
30	2.24	1.33	Finding out information by interviewing people.
31	2.30	1.24	Going off alone to work on an assignment.
32	2.89	1.10	Playing games with other students that help teach me new information.
33	2.84	1.20	Having the teacher explain directions on how to do things.
34	2.49	1.32	Presenting a lesson to the class on a topic I choose.
35	2.42	1.31	Playing a game where I compete against myself.
36	2.72	1.38	Having a spelling bee or math contest where I compete against other students.
37	2.23	1.16	Having the teacher lead the discussion in class.
38	2.37	1.44	Acting out stories that I read.
39	2.49	1.18	Planning a project I will work on by myself.
40	2.89	1.09	Hearing other students present reports in class.

Table 2
Initial Statistics (N=481)

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
1	.34879	1	7.70555	19.3	19.3
2	.24925	2	2.86401	7.2	26.4
3	.35855	3	2.61346	6.5	33.0
4	.39373	4	.78145	2.0	34.9
5	.36654	5	.69890	1.7	36.7
6	.34240	6	.60439	1.5	38.2
7	.38644	7	.52875	1.3	39.5
8	.36918	8	.46848	1.2	40.7
9	.50469				
10	.46712				
11	.39911				
12	.37117				
13	.39405				
14	.30748				
15	.52380				
16	.37103				
17	.50756				
18	.27770				
19	.24817				
20	.50860				
21	.50428				
22	.48068				
23	.32530				
24	.62945				
25	.48514				
26	.42255				
27	.48347				
28	.26770				
29	.42689				
30	.40749				
31	.56119				
32	.44291				
33	.35872				
34	.40339				
35	.22364				
36	.36544				
37	.43278				
38	.34237				
39	.51643				
40	.48978				

Table 3
Varimax Rotation Factor Matrix

	Factor 1	Factor 2	Factor 3
21	.67		
37	.61		
29	.59		
13	.57		
27	.57		
25	.57		
17	.56		
9	.53		
33	.52		
5	.49		
1	.46		
11	.46		
26	.45		
40	.42		
16	.41		
3	.36		
39		.66	
22		.53	
23		.51	
30		.51	
10		.49	
15		.49	
7		.47	
34		.47	
6		.47	
31		.47	
18		.46	
19		.45	
14		.43	
35		.37	
38		.35	
2		.35	
36		.33	
24			.69
20			.62
4			.57
12			.50
8			.47
32			.45
28			.42

Table 4
Oblimin (Oblique) Rotation Factor Matrix

Item	Factor 1	Factor 2	Factor 3
21	.70		
37	.64		
29	.61		
13	.61		
25	.58		
27	.56		
9	.56		
33	.55		
17	.55		
5	.48		
1	.47		
11	.44		
26	.43		
40	.42		
16	.41		
3	.33		
39		.63	
22		.59	
10		.57	
30		.55	
23		.54	
34		.48	
6		.47	
19		.47	
18		.47	
14		.44	
7		.42	
35		.39	
32		.38	
38		.38	
2		.36	
36		.30	
24			.64
15		.40	-.58
20			.55
4			.53
12			.45
31		.38	-.44
8			.38
28			.34

Table 5
Factor Inter-Correlation Matrix

	Factor 1	Factor 2	Factor 3
Factor 1	1.00		
Factor 2	.32	1.00	
Factor 3	.15	.09	1.00

Table 6a
Item Number, Stems, and Loadings for Factor 1: Teacher Directed Activity

Item	Stem	Loading
21	Doing worksheets from the teacher.	.67
37	Having the teacher lead the discussion in class.	.61
29	Having the teacher suggests topics for discussion in class.	.59
13	Hearing the teacher explain new information.	.57
27	Searching for answers to homework questions by myself.	.57
25	Taking tests the teacher makes to show what I know.	.57
17	Having the teacher quiz me on what I read or learned.	.56
9	Having the teacher assign the topic for an assignment.	.53
33	Having the teacher explain directions on how to do things.	.52
5	Having discussions in my class where the teacher asks us questions.	.49
1	Having the teacher call on student to give answers.	.46
11	Reading a book to learn about a new topic.	.46
26	Learning new things by organizing study groups.	.45
40	Hearing other students present reports in class.	.42
16	Hearing other student's ideas during discussions.	.41
3	Going to the library to look up information on my own.	.36

Table 6b
Item Number, Stems, and Loadings for Factor 2: Student Initiated Activity

Item	Stem	Loading
39	Planning a project I will work on by myself.	.66
22	Going to museums or science centers to learn about something I am interested in.	.53
23	Learning new things by experimenting with different materials on my own.	.51
30	Finding out information by interviewing people.	.51
10	Choosing my own topic to study.	.49
15	Working alone on projects for class.	.49
7	Working by myself to learn the lesson.	.47
34	Presenting a lesson to the class on a topic I choose.	.47
6	Working on projects that are not assigned in class.	.47
31	Going off alone to work on an assignment.	.47
18	Doing reports on books I chose to read outside of class.	.46
19	Working on the computer by myself.	.45
14	Doing science experiments or arts projects where I get to do the work.	.43
35	Playing a game where I compete against myself.	.37
38	Acting out stories that I read.	.35
2	Finding experts to answer questions about a topic I am interested in.	.35
36	Having a spelling bee or math contest where I compete against other students.	.33

Table 6c
Item Number, Stems, and Loadings for Factor 3: Group Activity

Item	Stem	Loading
24	Working with other students on assignments or projects.	.69
20	Working in a group with other students who like the same topic.	.62
4	Working with other students on a report to give in class.	.57
12	Studying with other students for a test.	.50
8	Being part of a committee with other students.	.47
32	Playing games with other students that help teach me new information	.45
28	Playing computer games with other students.	.42

Table 7a
Reliability Analysis Scale (Alpha) Factor 1: Teacher Directed Activity (N = 470)

Item	Response Percentages 1	2	3	4	5	Mean	Std. Dev.	Corrected r with Dimension	Alpha if Item Deleted	Dimension Alpha Reliability
1	5	7	34	32	23	2.61	1.06	.46	.86	
3	8	12	26	24	29	2.54	1.25	.41	.86	
5	6	14	36	25	19	2.36	1.12	.50	.86	
9	16	20	30	22	12	1.95	1.24	.47	.86	
11	5	13	27	29	26	2.59	1.15	.49	.86	
13	3	8	23	28	37	2.88	1.10	.54	.86	
16	6	7	24	37	26	2.71	1.10	.43	.86	
17	20	20	30	17	13	1.83	1.29	.54	.86	
21	13	16	27	23	21	2.22	1.31	.59	.86	.87
25	11	17	31	23	18	2.20	1.24	.53	.86	
26	10	19	35	23	13	2.10	1.16	.49	.86	
27	10	17	28	25	21	2.32	1.24	.53	.86	
29	10	15	35	27	13	2.18	1.15	.57	.86	
33	5	9	22	24	40	2.84	1.20	.48	.86	
37	9	16	36	24	16	2.23	1.16	.55	.86	
40	3	8	22	30	37	2.89	1.09	.45	.86	

Table 7b
Reliability Analysis Scale (Alpha) Factor 2: Student Initiated Activity (N = 474)

Item	Response Percentages 1	2	3	4	5	Mean	Std. Dev.	Corrected r with Dimension	Alpha if Item Deleted	Dimension Alpha Reliability
2	10	23	29	19	20	2.16	1.26	.35	.82	
6	12	16	27	18	26	2.31	1.34	.44	.81	
7	12	15	33	24	16	2.16	1.23	.36	.82	
10	3	8	14	27	47	3.08	1.10	.37	.82	
14	3	5	14	24	54	3.22	1.05	.41	.82	
15	8	14	33	23	22	2.36	1.19	.39	.82	
18	15	17	26	21	21	2.16	1.35	.42	.82	
19	3	4	12	20	61	3.31	1.04	.38	.82	.82
22	4	7	10	17	62	3.26	1.13	.50	.81	
23	7	6	23	28	35	2.78	1.20	.50	.81	
30	12	21	22	23	23	2.24	1.33	.52	.81	
31	11	14	31	24	21	2.30	1.24	.41	.82	
34	11	12	24	24	30	2.49	1.32	.49	.81	
35	10	15	24	24	27	2.42	1.31	.34	.82	
36	11	11	15	21	42	2.72	1.38	.34	.82	
38	14	19	17	19	32	2.37	1.44	.37	.82	
39	6	15	29	25	25	2.49	1.18	.60	.81	

Table 7c
Reliability Analysis Scale (Alpha) Factor 3: Group Activity (N = 478)

Item	Response Percentages 1	2	3	4	5	Mean	Std. Dev.	Corrected r with Dimension	Alpha if Item Deleted	Dimension Alpha Reliability
4	5	9	26	27	32	2.71	1.15	.52	.75	
8	5	11	33	29	22	2.51	1.11	.48	.76	
12	15	11	22	27	25	2.35	1.37	.46	.77	
20	5	6	24	31	35	2.84	1.12	.58	.74	.78
24	5	9	26	33	27	2.66	1.12	.63	.73	
28	6	8	18	22	47	2.97	1 22	.44	.77	
32	4	7	24	28	38	2.89	1.10	.47	.76	